

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently Amended) A stent delivery device for delivering a plurality of stent segments to a treatment site, the device comprising:

 a catheter shaft having a proximal end and a distal end;

 an expandable member coupled with the catheter shaft near the distal end;

 an axially movable sheath disposed over at least part of the catheter shaft and the expandable member, the sheath having a reinforced distal portion adapted to resist radial expansion of the expandable member;

 a shuttle disposed coaxially over at least part of the catheter shaft and the expandable member, at least part of the shuttle being radially expandable, wherein the outer surface of the shuttle is free of surface features that prohibit positioning of a stent segment along the outer surface, and wherein the outer surface of the shuttle is adapted to allow a pair of adjacent stents to be positioned into direct engagement with one another; and

 a plurality of stent segments disposed along the shuttle;

 wherein moving the sheath axially toward the proximal end of the catheter shaft allows at least part of the expandable member to expand against the shuttle to cause the shuttle to radially expand while a remaining portion of the expandable member is constrained by the sheath, thus causing at least one of the plurality of stent segments to expand.

2. (Original) A device as in claim 1, wherein the shuttle is slidably disposed over at least part of the catheter shaft and the expandable member.

3. (Original) A device as in claim 1, wherein the shuttle is fixedly disposed over at least part of the catheter shaft and the expandable member.

4. (Withdrawn) A device as in claim 1, wherein the shuttle is disposed over the sheath.

5. (Original) A device as in claim 1, wherein the sheath is disposed over the shuttle.

6. (Original) A device as in claim 1, wherein the sheath is adapted to expose a first portion of the expandable member to deploy a first selected number of stent segments.

7. (Original) A device as in claim 6, wherein the sheath is adapted to further expose at least a second portion of the expandable member to deploy a second selected number of stent segments.

8. (Original) A device as in claim 1, wherein the stent segments are fixed to the shuttle until they are expanded into a deployed position.

9. (Previously presented) A device as in claim 1, wherein the stent segments are slidably disposed along the shuttle, the device further comprising a stent-pushing member disposed over the shuttle, proximal to the plurality of stent segments, for advancing the stent segments along the shuttle in a direction from proximal to distal.

10. (Original) A device as in claim 9, wherein the shuttle further comprises an abutment at or near a distal end of the shuttle for preventing the plurality of stent segments from being advanced beyond the distal end of the shuttle.

11. (Currently Amended) A stent delivery device for delivering a plurality of stent segments to a treatment site, the device comprising:

a catheter shaft having a proximal end and a distal end;

an expandable member coupled with the catheter shaft near the distal end;

an axially movable sheath disposed over at least part of the catheter shaft and the expandable member, the sheath having a reinforced distal portion adapted to resist radial expansion of the expandable member;

a shuttle disposed over at least part of the catheter shaft and the expandable member, at least part of the shuttle being radially expandable, wherein the outer surface of the shuttle is free of surface features that prohibit positioning of a stent segment along the outer surface, and wherein the outer surface of the shuttle is adapted to allow a pair of adjacent stents to be positioned into direct engagement with one another;

a plurality of stent segments slidably disposed along the shuttle; and

a stent-pushing member disposed over the shuttle, proximal to the plurality of stent segments, for advancing the stent segments distally along the shuttle;

wherein moving the sheath axially toward the proximal end of the catheter shaft exposes at least part of the expandable member, allowing it to expand against the shuttle to cause the shuttle to radially expand while a remaining portion of the expandable member is constrained by the sheath, causing at least one of the plurality of stent segments to expand.

12. (Original) A device as in claim 11, wherein the shuttle is slidably disposed over at least part of the catheter shaft and the expandable member.

13. (Original) A device as in claim 11, wherein the shuttle is fixedly disposed over at least part of the catheter shaft and the expandable member.

14. (Withdrawn) A device as in claim 11, wherein the shuttle is disposed over the sheath.

15. (Original) A device as in claim 11, wherein the sheath is disposed over the shuttle.

16. (Original) A device as in claim 11, wherein the sheath is adapted to expose a first portion of the expandable member to deploy a first selected number of stent segments.

17. (Original) A device as in claim 16, wherein the sheath is adapted to further expose at least a second portion of the expandable member to deploy a second selected number of stent segments.

18. (Original) A device as in claim 11, wherein the shuttle further comprises an abutment near a distal end of the shuttle for preventing the plurality of stent segments from being advanced beyond the distal end of the shuttle.

19. (Original) A device as in claim 11, further including at least one valve member coupled with the sheath for selectively retaining at least one stent segment within the sheath.

20. (Previously presented) A device as in claim 11, wherein the stent-pushing member is configured to engage a proximal stent segment disposed at a proximal end of the plurality of stent segments.

21. - 34. (Cancelled)